CYBER SECURITY NEWSLETTER

JM INTERNATIONAL SCHOOL, DWARKA, DELHI

COMMON CATEGORIES
OF CYBER SECURITY

- **Network security** is the practice of securing a computer network from intruders, whether targeted attackers or opportunistic malware.

- **Application security** focuses on keeping software and devices free of threats. A compromised application could provide access to the data it's designed to protect. Successful security begins in the design stage, well before a program or device is deployed.

- **Information security** protects the integrity and privacy of data, both in storage and in transit.

- **Operational security** includes the processes and decisions for handling and protecting data assets. The permissions users have when accessing a network and the procedures that determine how and where data may be stored or shared all fall under this umbrella.

WHAT ARE THE TYPES
OF CYBER THREATS?

- **Cybercrime** includes single actors or groups targeting systems for financial gain or to cause disruption.

- **Cyber-attacks** often involve politically motivated information gathering.

- **Cyberterrorism** is intended to undermine electronic systems to cause panic or fear.

AMITABH BACHCHAN'S TWITTER ACCOUNT HACKED, TWEETS SLAM INDIA

ABOUT
STEMROBO TECHNOLOGIES

STEMROBO Technologies Pvt Ltd is an Indian company that provides education and training services in the field of STEM (Science, Technology, Engineering, and Mathematics) and robotics. The company's aim is to promote hands-on learning and innovation among young students by providing them with educational kits, training programs, and workshops.

Stemrobo Technologies Pvt Ltd offers a range of products and services, including robotics kits, coding kits, and educational software. The company's products are designed to be user-friendly and provide a fun and engaging way for students to learn about STEM subjects. In addition to its educational products, Stemrobo Technologies Pvt Ltd also conducts workshops and training programs for students, teachers, and educational institutions. These programs are designed to help participants learn the basics of robotics and coding, and develop their skills in these areas.

Importance of STEM Education for Kids

The term "STEM" typically refers to a group of academic disciplines that are focused on science, technology, engineering, and mathematics. it prepares them for the future by building problem-solving skills, encouraging curiosity and exploration, fostering collaboration and communication skills, and addressing global challenges that require STEM principles for their solution.

About
School STEMROBO Lab

The Robotics Lab is a dedicated workspace where students can learn, experiment, and transform their ideas into prototypes. Designed to foster creativity beyond rote learning, the lab encourages students to explore futuristic skills such as design and computational thinking, adaptive learning, and artificial intelligence.

Equipped with state-of-the-art tools and equipment like 3D printers, robotics kits, and electronic components, the Robotics Lab provides a hands-on learning experience in science, technology, engineering, and mathematics (STEM) fields. The primary goal is to cultivate problem-solving and critical thinking skills from an early age. By promoting experimentation and innovation, the lab aims to nurture the next generation of innovators and entrepreneurs, preparing them for future challenges and contributing to the overall development of India's technological landscape.

Grade I – Scratch Platform/Revision of linkage box

Students learned through interactive activities using the Scratch platform. They explored basic coding concepts by creating simple games and animations, which helped develop creativity, logical thinking, and problem-solving skills.

Activities included:

Hide and Seek Game:

Students created a simple Hide and Seek game using sprites. They learned how to control sprite movement, use events, and apply basic logic to hide and show sprites on the stage.

Smart Waste Separator Game:

Students designed a Smart Waste Separator game where they sorted waste into correct categories using sprites and blocks. Through this activity, they understood the importance of waste segregation while learning how to use conditions, sequencing, and interactions in Scratch.
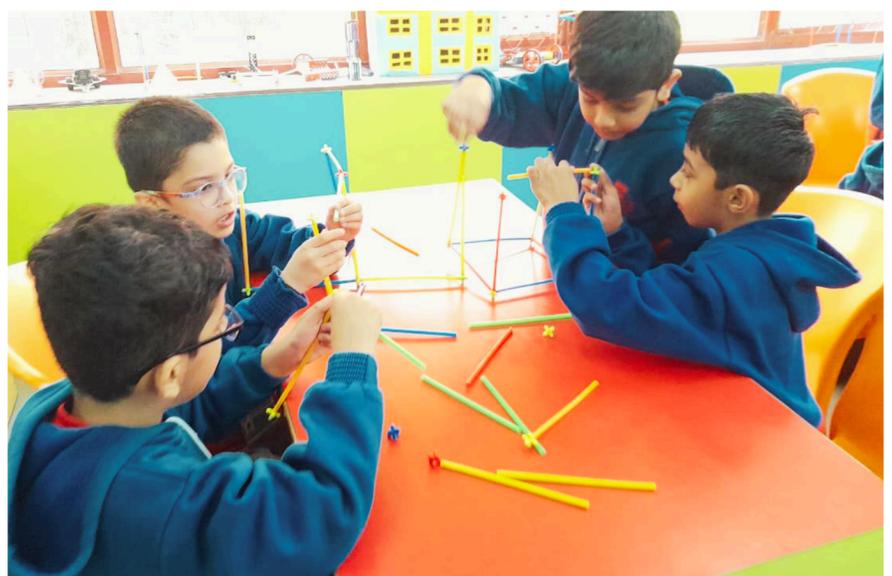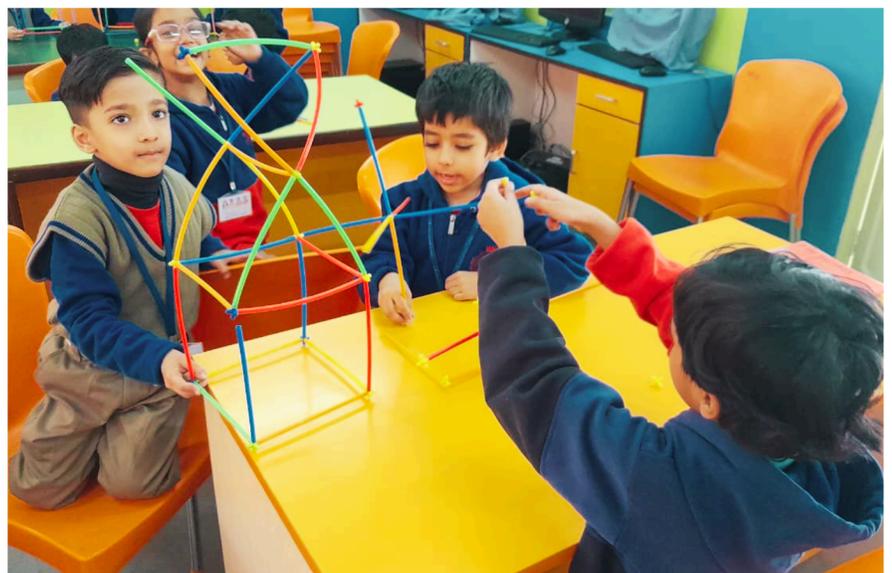
FACT
Human error accounts for 95% of all data breaches.

GLIMPSE OF ACTIVITIES

Grade II – Scratch Platform

Students enhanced their block-based coding skills using the Scratch platform by creating interactive games and projects. These activities helped them improve logical thinking, creativity, and problem-solving abilities.

Activities included:

Garbage Collector Game:

Students created a Garbage Collector game where a sprite collects waste items on the stage. They learned how to use motion, events, and control blocks to move sprites, score points, and build simple game logic while understanding the importance of cleanliness.

Piano Project:

Students designed a Piano using the Scratch tool by assigning different sounds to keys. They learned how to use sound blocks, events, and user interactions to play music, helping them understand coordination between inputs and outputs in coding.
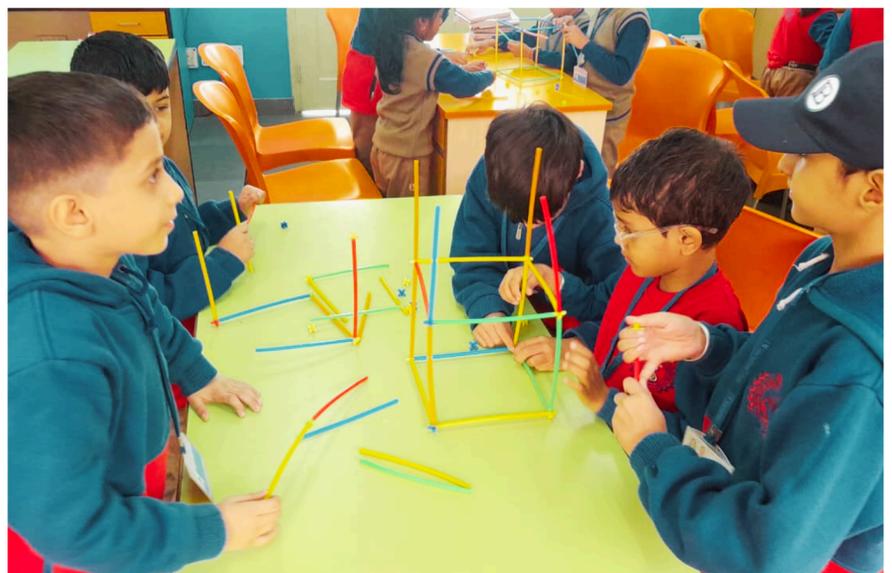
FACT

Delhi generates over 11,000 tonnes of garbage every day, and a large part of it still ends up in overflowing landfills, creating serious environmental and health risks.

Grade III – Block Coding Platform

Students developed their logical and analytical skills through block-based coding activities. They worked on interactive projects that strengthened their understanding of coding concepts and introduced them to text-based programming ideas.

Activities included:

Maze Coding:

Students created maze-based games using coding blocks, where they controlled sprite movement through paths and obstacles. They learned about sequencing, conditions, and problem-solving by guiding the sprite to the correct destination.

Puzzle Coding:

Students solved and designed puzzle-based activities using blocks. These activities helped them understand logic building, patterns, and step-by-step thinking required to complete tasks efficiently.

FACT
Over 100 million learners worldwide use block-based coding platforms like Scratch and Blockly to learn programming.

GLIMPSE OF ACTIVITIES

Grade IV – Blockly Games and Micro:bit Revision

Students strengthened their coding and electronics knowledge through interactive learning activities. They practiced logical thinking and problem-solving while revising key concepts in both block-based coding and hardware.

Activities included:

Blockly Games:

Students worked on Blockly Games to improve their understanding of logic, sequencing, loops, and conditions. These games helped them build strong problem-solving skills through fun and challenging tasks.

Micro:bit Revision:

Students revised Micro:bit concepts, including basic programming, input and output functions, and sensor usage. They practiced writing block-based programs to control LEDs, buttons, and simple interactions, reinforcing their understanding of Micro:bit hardware and coding.

FACT
India has over 15 million coding learners, including school students, and the number is growing rapidly due to block coding and beginner-friendly platforms.

GLIMPSE OF ACTIVITIES

Class V – Blockly Games Platform

Students enhanced their coding skills through engaging activities on the Blockly Games platform. These activities helped them strengthen logical thinking, sequencing, and problem-solving abilities using block-based coding.

Activities included:

Block Coding Game:

Students played and solved block coding games that focused on logic building, loops, and conditions. They learned how to plan steps carefully and execute them using the correct sequence of blocks.

Bird Puzzle Coding:

Students worked on the Bird Puzzle game using the Blockly Games platform, where they guided the bird to reach its destination by applying correct logic and conditions. This activity helped them understand decision-making in coding and improved their analytical thinking skills.

FACT

43% of cyber attacks target small businesses.

GLIMPSE OF ACTIVITIES

Grade VI – Tinker Orbit PBL Kit Activities

Students explored hands-on electronics and coding concepts using the Tinker Orbit PBL Kit. Through practical projects, they learned how hardware components work together with logical instructions to create functional models.

Activities included:

Smart Watch:

Students built a Smart Watch model using the Tinker Orbit Kit. They learned about basic circuits, display functions, and timing concepts while understanding how wearable technology works in real life.

HeliBot:

Students assembled and programmed the HeliBot model, learning about motors, motion control, and balance. This activity helped them understand robotics concepts and improved their mechanical and problem-solving skills.

Night Light:

Students created a Night Light project using sensors and LEDs. They learned how light-based automation works and how electronic components respond to environmental changes, strengthening their understanding of practical electronics and creativity.

FACT

Digital watches use a quartz crystal oscillator that vibrates at a precise frequency (32,768 Hz) to keep accurate time.

Grade VII – Introduction to Python

Students were introduced to the basics of Python programming and learned how text-based coding works. They understood simple syntax, commands, and the importance of writing correct instructions.

Activities included:

Basic Python Introduction:

Students learned about Python, its uses, and how to write simple programs. They were introduced to concepts such as variables, input, and output.

Addition of Two Numbers:

Students wrote a basic Python program to add two numbers. Through this activity, they learned how to take user input, perform arithmetic operations, and display the result, building a strong foundation for future programming concepts.
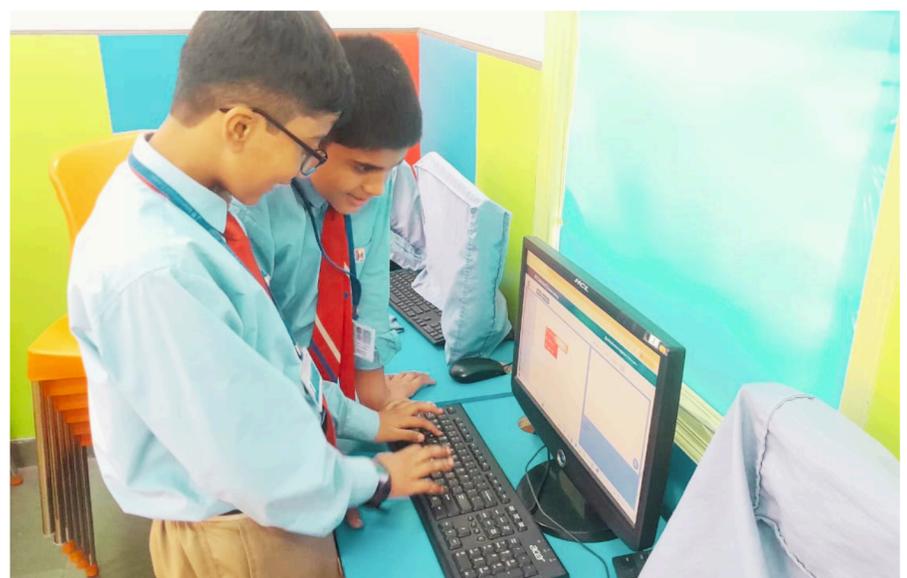
FACT

A single line of Python code can do what may require 10–15 lines in other programming languages, making Python one of the most powerful and efficient languages in the world.

GLIMPSE OF ACTIVITIES

Grade VIII – Python Programming
Students were introduced to Python programming and learned fundamental concepts of text-based coding. They practiced writing simple programs to strengthen their logical thinking and problem-solving skills.

Activities included:
Introduction to Python:
Students learned about Python, its applications, and basic syntax, including variables, input/output, and simple commands.

Table of Any Number:
Students wrote a Python program to generate the multiplication table of any number. This activity helped them understand the use of loops, arithmetic operations, and structured logic in programming.

FACT
Nearly 30–40% of household water is wasted due to leakage and uncontrolled usage, which can be reduced through effective water management systems.

GLIMPSE OF
PROJECTS

The **Water Management Project** is designed to monitor and control excessive water consumption in a household or building. The system uses two water flow sensors to measure the amount of water being used in different pipelines or sections. An **Arduino** acts as the main controller, continuously reading data from the **flow sensors** and calculating the total water consumption.

A water level sensor is used to monitor the level of water in the tank to prevent overflow. The measured water consumption data is displayed in real time on an **LCD display**, allowing users to easily track how much water is being used. A buzzer is included as an alert system; it activates when water consumption exceeds a predefined limit or when the tank reaches a critical level.

This project helps promote efficient water usage by providing real-time monitoring, visual feedback, and alerts. With this project, our students participated in the **CBSE Regional Science Exhibition held at Maharaja Agarsain Public School, Delhi**, showcasing their innovation and practical understanding of water conservation.
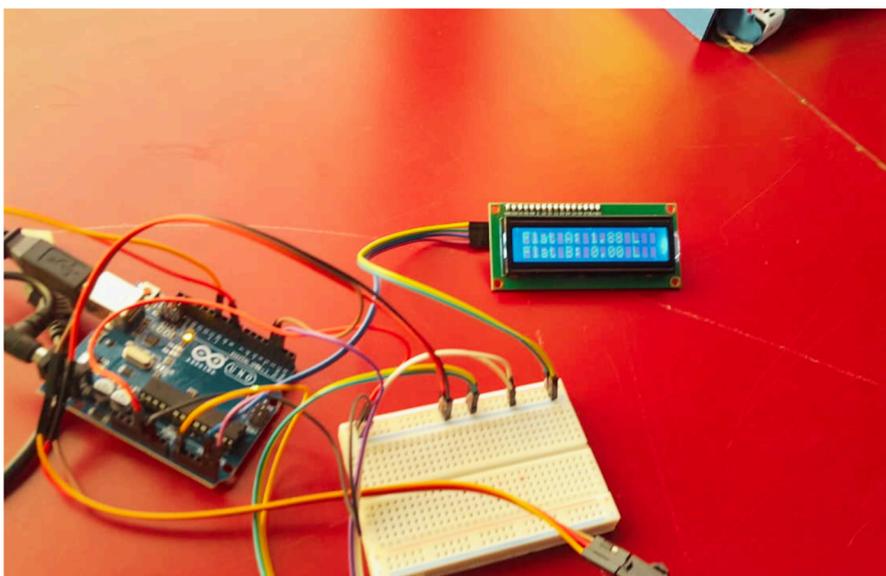
FUN FACT

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Project
Water Management System

FUN FACT
Integration of renewable energy sources in industries has lowered carbon emissions by an average of 20% in the last decade.

THANK YOU